

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1, 3-4, 6-25 and 29-32 are currently pending in this application. No new matter has been added by way of the present amendment. New claim 32 recites "preferred" features of previously presented claim 1 and is supported by the Specification at, for example, page 7, line 10 and page 9, lines 17-36. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

Objection to the Specification

The Specification is objected to because it makes reference to a claim that has been cancelled. Applicants respectfully traverse.

Applicants have amended the Specification to delete the paragraph containing a reference to a cancelled claim. Accordingly, this objection is moot.

Reconsideration and withdrawal of this objection are thus respectfully requested.

Issues Under 35 U.S.C. § 102(b)

Claims 1, 13, 14 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Bernier et al. (U.S. 5,834,571) (hereinafter Bernier '571). Applicants respectfully traverse.

The Examiner asserts that Bernier '571 discloses a method of producing a polymer in a continuously operated gas phase reactor, polymerizing at least one monomer in a bed containing

an active catalyst and adjusting a discharge rate to withdraw a polymer product from the reactor. The Examiner further asserts that Bernier '571 inherently teaches a step of "separately recovering particle agglomerates from the reactor".

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of anticipation. For anticipation under 35 U.S.C. §102, the reference must teach each and every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

The present invention is directed, *inter alia*, to a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from the reactor, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates. In a preferred embodiment, the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1, and the polymer powder is degassed after it is withdrawn from the reactor (*see*, for example, claim 32).

Bernier '571 discloses a gas phase polymerization process wherein a stream of monomer and gas is introduced into a polymerization zone and at least one liquid component is provided.

Bernier '571 does not explicitly or implicitly disclose a method of producing a polymer in a continuously operated gas phase reactor, as presently claimed.

Contrary to the Examiner's assertion, Bernier '571 does not inherently disclose a step of separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates. Applicants respectfully submit that, in order to establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is **necessarily present**". *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949 (Fed. Cir. 1999) (emphasis added). The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Id.* Applicants submit that the method of Bernier '571 does not necessarily comprise a step of separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates.

Bernier '571 discloses a gas phase reactor for olefin polymerization (see Figure 1). As disclosed at column 19, lines 41 to 54 of Bernier '571, the product withdrawal is conducted periodically (intermittently). Bernier '761 discloses the use of a filter (64) for preventing polymer powder from entering the compressor (66) and damaging it. As is clear to one of ordinary skill in the art, this filter or screen is not suitable for collecting lumps, as the lumps could never enter the gas stream leaving the surge tank (60) through the filter (64) and entering the compressor (66). Furthermore, even if lumps were collected in the filter (64), there would be no separate nozzle to withdraw the lumps, as the only outlet from the surge tank (60) is the gas pipe through the filter (64) and into the compressor (66).

The Examiner's attention is directed to Applicants' Specification at page 7, lines 23-28, where the term "particle agglomerates" is defined. As stated in the Specification, polymer "particle agglomerates" are particles having a minimum thickness of at least about 6mm, at least partially fused together and comprising sheets, chunks or lumps formed during polymerization. These particles are so heavy that they are not carried with the gas stream from vessel (46) through the valve (50) to the surge tank (62), but rather follow the flow of polymer powder from the vessel (46) through the valve (52) and into the vessel (54) (*see*, also, Applicants' specification at col. 19, lines 37-38, clearly establishing that it is the fluid and not the polymer that passes through the filter (64)). Bernier '571 does not disclose or suggest that a screen or filter could be present at this location.

Furthermore, Applicants submit that the polymer powder in Bernier '571 is not in a fluidized state in vessel (46), but rather in a settled state, as the separation of the gas from the powder occurs in the vessel (46) (*see* Bernier '571 at col. 19, lines 21 to 23). The gas is directed through the valve (50) and into the surge tank (62), whereas the powder is transported through the valve (52) to the polymer surge tank (54) (*see* Bernier '571 at col. 19, lines 30-37). Accordingly, the polymer is a particulate solid inside and downstream of the vessel (46).

Clearly, Bernier '571 fails to explicitly or implicitly teach each and every aspect of the claimed invention, and thus fails to anticipate the same.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Issues Under 35 U.S.C. § 103(a)

Claims 1, 3, 4, 6-25, and 29-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bernier '571 view of de Lorenzo et al. (U.S. 4,535,134) (hereinafter de Lorenzo '134). Applicants respectfully traverse.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

As previously discussed, Bernier '571 fails to teach a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from

the reactor, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates. The de Lorenzo reference fails to cure these deficiencies.

The reference to de Lorenzo teaches a method and apparatus for controlling the discharge of product from vapor phase polymerization of monomers in a horizontal stirred-bed reactor. Although the Examiner may turn to de Lorenzo '134 for teachings pertaining to a control valve, the teachings of de Lorenzo '134 fail to address the deficiencies of Bernier '571 in disclosing or suggesting the combination of continuous withdrawal of polymer powder and separate withdrawal of the agglomerates, as presently claimed.

Evidently, the cited references, alone or in combination, fail to teach or suggest every limitation of the instant invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Andrew D. Meikle, Reg. No. 32,868 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: September 12, 2007

Respectfully submitted,

By 

Andrew D. Meikle

Registration No.: 32,868

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant